Hunter River Salinity Trading Scheme

2015–16 performance

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Environment Protection Authority

More information about the Hunter River Salinity Trading Scheme

More information on the operation of the Hunter River Salinity Trading Scheme (HRSTS) can be obtained online from the EPA at: www.epa.nsw.gov.au/licensing/hrsts/ and from the NSW Department of Primary Industry – Water at: waterinfo.nsw.gov.au/hunter/trading.shtml

Follow the links from these webpages for information on river flow and electrical conductivity conditions in the Hunter River.

For more information on the operations of the HRSTS, telephone (02) 4908 6800 or email hrsts@epa.nsw.gov.au

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What is the Hunter River Salinity Trading Scheme?

The Hunter River Salinity Trading Scheme (the Scheme) involves a system of salt credits which industries can buy and trade. Industries use these credits to discharge their salty water into the Hunter River, but only when the river contains adequate fresh water to dilute the salt and maintain water quality. The Scheme therefore balances the amount of salt that industry can discharge with the naturally occurring salt in the river.

River flow is measured at a series of monitoring points along the river. When flows are low no discharges are allowed; however, during periods of high flow, limited discharge can occur but only if the industry has sufficient salt credits. When flood flows occur, discharges are allowed up to an agreed salinity goal. The river is divided into three sectors for the purposes of the scheme, with salinity goals set for each sector.

The scheme is administered by the NSW Department of Primary Industry - Water under a service agreement with the NSW Environment Protection Authority guided by the Hunter River Salinity Trading Scheme Operations Committee. The Committee includes representatives from State Government, industry and the community.

What is the purpose of the Hunter River Salinity Trading Scheme?

The Hunter River Salinity Trading Scheme has been designed to balance the water quality needs of users (such as agriculture) with the discharge needs of industry (mining, electricity generators). Overall, salinity is kept to an appropriate level by only allowing discharges during high flow or flood events and balancing the amount of salt that industry can discharge with the naturally occurring salt in the river.

The Hunter River naturally contains high levels of salt as a result of salty groundwater inflows and the Scheme monitors these levels to ensure that industry discharges only occur when natural salinity levels are appropriately low. By balancing the amount of salt that industry can discharge with the naturally occurring salt in the river, the Scheme helps to manage the impact of industrial discharges on the health of the river and the surrounding environment and ensures that the water is suitable for local primary producers to use for irrigation purposes.

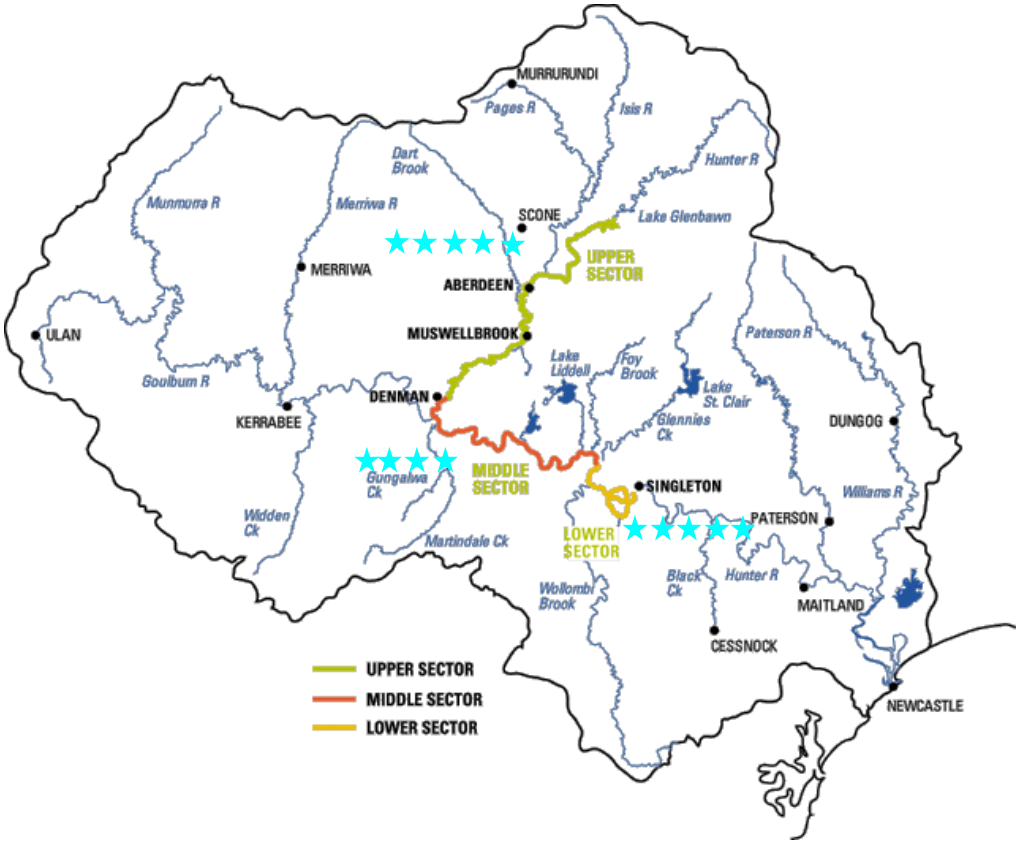
How did the Hunter River Salinity Trading Scheme perform in 2015–16?

Salinity is measured by determining the electrical conductivity (EC) of water. EC estimates the amount of total dissolved salts in the water and is measured in micro Siemens per centimetre (µS/cm). Salt water has an EC of around 55,000 µS/cm. Drinking quality water usually has an EC of between 600 and 1200 µS/cm.

During periods of low flow, the Hunter River may experience periods of naturally elevated levels of salinity as demonstrated in the graphs below. This is a result of naturally salty surface and groundwater flow and is not related to industry discharges.

Scheme performance during industry discharge events

★★★★★ Salinity goal not exceeded
★★★★ Salinity goal exceeded for 1 discharge period
★★★ Salinity goal exceeded for 2 – 4 discharge periods
★★ Salinity goal exceeded for 5 – 9 discharge periods
★ Salinity goal exceeded for 10 or more discharge periods



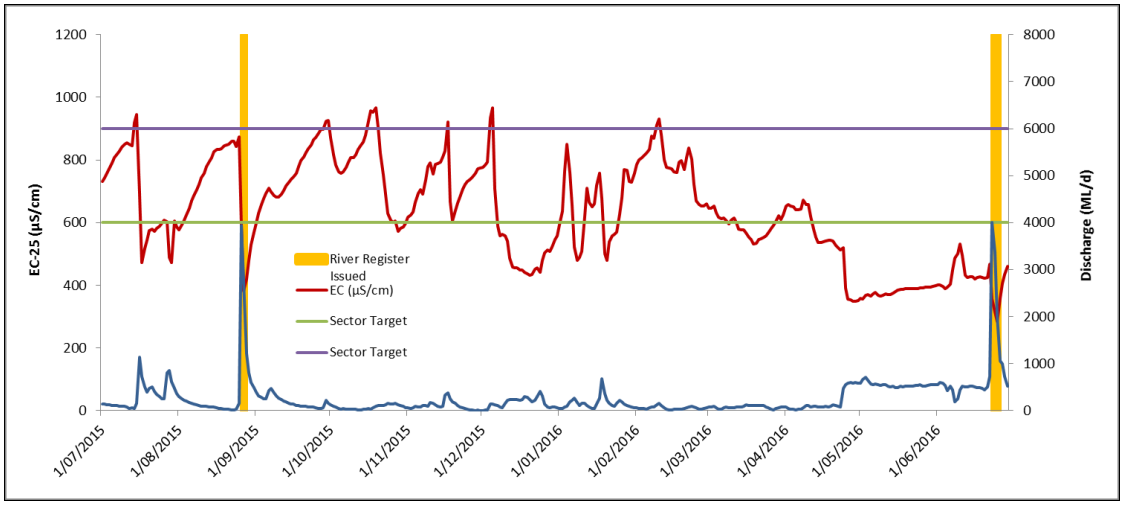
During 2015-16, Scheme participants had four opportunities to discharge saline water. Discharge events occurred in August 2015 and June 2016 for the upper, middle and lower sectors. In January 2016, two additional discharge events occurred for the middle and lower sectors. Flood flows occurred in the middle and lower sectors in January 2016.

The information below provides a summary of salinity and flow information in the upper, middle and lower sectors of the Hunter River over the year. Salinity results are compared to the established salinity goals which have been set for the three sectors of the Hunter River. The salinity goals were not exceeded during industry discharge events.

Upper Sector: Hunter River upstream of Denman – Graph A

The salinity goal for the Upper Sector is 600 µS/cm during high flows (shown in Graph A, below, as a green line) and 900 µS/cm during flood flows (shown below as a purple line). There were no industrial discharges reported during the 2015/16 year for the Upper Sector participants.

The elevated levels shown in the graph are not related to any discharges from the coal mining or power generation industries but are due instead to naturally salty surface and groundwater flow.



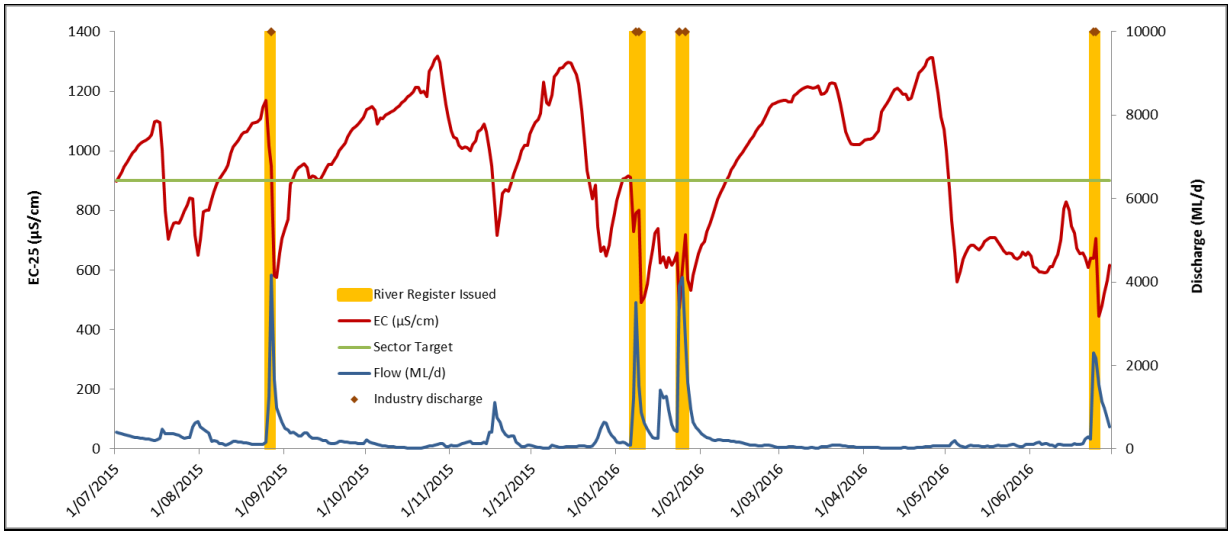
Graph A: Maximum Salinity and Minimum Flow – Hunter River at Denman

Middle Sector: from Denman to the junction of the Hunter River and Glennies Creek – Graph B

The salinity goal for the Middle Sector is 900µS/cm and is shown in Graph B, below, as a green line. The majority of industry participants in the middle sector discharged during the flood flow period in early January 2016 (6-10 January 2016). Besides this flood event, other discharges to the river from industry participants in the middle sector occurred during 26-27 August 2015, 24-26 January 2016 and 24-25 June 2016.

Graph B shows that during the discharge event in late August 2015, a river register permitted discharges to commence about ten hours before EC levels dropped below the threshold of 900µS/cm. However, no middle sector industry participants discharged into this block. Processes have been improved to ensure that this situation does not occur again.

The elevated EC levels shown in the graph below are not related to any discharges from the coal mining or power generation industries but are instead due to naturally salty surface and groundwater flow.



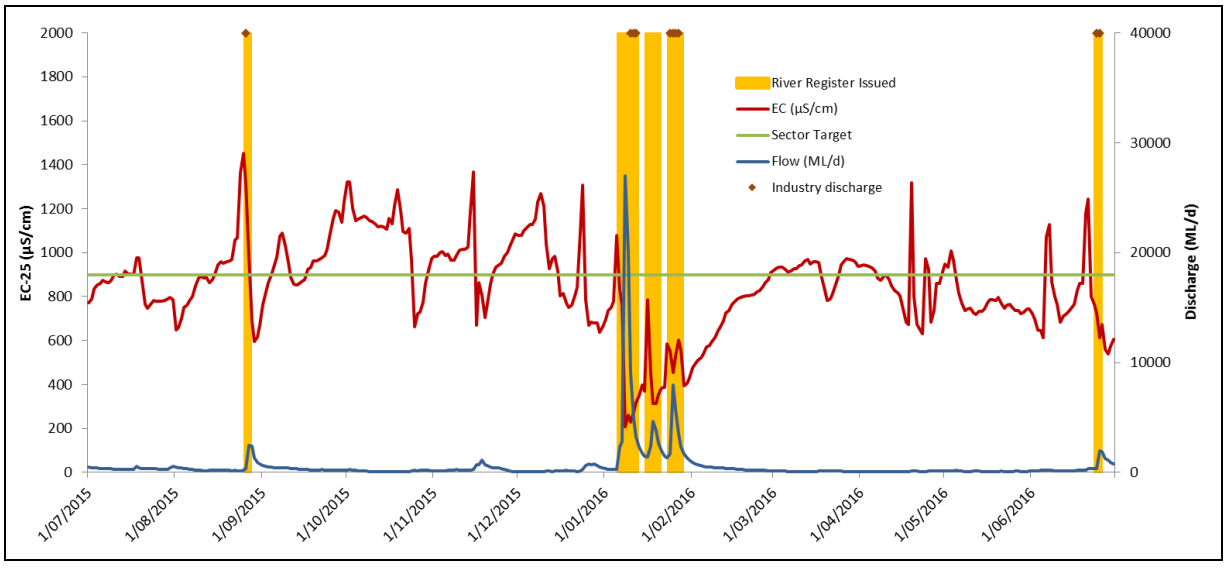
Graph B: Maximum Salinity and Minimum Flow – Hunter River Upstream of Glennies Creek.

Lower Sector: from the junction of the Hunter River and Glennies Creek to Singleton – Graph C

The salinity goal for the Lower Sector is 900 µS/cm, shown as a green line in Graph C, below.

The majority of Lower Sector Scheme participants discharged during either the flood event or high flow conditions in January 2016. Discharges also occurred in late August 2015 and late June 2016.

The elevated levels shown in the graph below are not related to any discharges from the coal mining or power generation industries but are instead due to naturally salty surface and groundwater flow.



Graph C: Maximum Salinity and Minimum Flow – Hunter River at Singleton